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(54) 【発明の名称】 減身用食品

(57) 【要約】

【目的】 α-サイクロデキストリンとγ-リノレン酸とを主成分としてなる減身用食品に、更に一段と優れた減身作用を有する新しい減身用食品を開発すること。

【構成】 α-サイクロデキストリン、γ-リノレン酸及び白人参とを含有せしめること。



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## PATENT ABSTRACTS OF JAPAN

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### (54) FOOD FOR SLIM FIGURE

#### (57) Abstract:

**PURPOSE:** To obtain a food for slim figure useful as a food additive, having excellent synergistic action and preventing effect on obesity, containing  $\alpha$ -cyclodextrin,  $\gamma$ -linolenic acid and ginseng.

**CONSTITUTION:** This food for slim figure contains (A) 100 pts.wt. of a cyclodextrin, (B) preferably 0.5-10 pts.wt. of  $\gamma$ -linolenic acid and (C) preferably 0.5-5 pts.wt. of ginseng. The food for slim figure is preferably mixed with one or more of chlorophyll, essence of TOTYUUYOU (leaf of *Euonymus tricarpos*) and an ascospore-like lactic acid bacteria.

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[Title of the Invention]

DIET FOOD

[Abstract]

[PURPOSE] To obtain a novel diet food with more excellent dietary efficiency comprising  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid as main components.

[CONSTITUTION] This diet food comprises  $\alpha$ -cyclodextrin,  $\gamma$ -linolenic acid and a white ginseng component.

[Claims]

1. A diet food comprising  $\alpha$ -cyclodextrin,  $\gamma$ -linolenic acid and a white ginseng component.

2. The diet food according to Claim 1 wherein the food comprises 0.5-10 pts.wt. of  $\gamma$ -linolenic acid and 0.5-5 pts.wt. of the white ginseng component based on 100 pts.wt. of  $\alpha$ -cyclodextrin.

[Detailed Description of the Invention]

[0001]

(FIELD OF THE INVENTION)

The present invention relates a diet food.

[0002]

(Background of the Related Art)

There has been known generally three species of isomeric materials in cyclodextrin in view of a difference of molecular structure thereof, more particularly, such as  $\alpha$ -cyclodextrin,  $\beta$ -cyclodextrin and  $\gamma$ -cyclodextrin. Such

cyclodextrins have been available as materials for foods for a long time.

[0003]

In recent years, it was disclosed that one of the cyclodextrins,  $\alpha$ -cyclodextrin may be useable as a material for diet food.

[0004]

Furthermore, it was also reported that  $\gamma$ -cyclodextrin affects to metabolism of fats and is preferable to preserve one's health.

[0005]

Meanwhile, it is known that if the above  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid together are used, a synergistic effect involved by both of the compounds generates an efficiency to prevent the obesity and an increase in body weight so that these compounds are extremely preferable to prepare diet food products (see, Japanese Laid-Open Appln. No. SHO 62-44905).

[0006]

As the result of intensive studies by the present inventors in order to develop novel diet food, especially comprising  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid. Consequently, the inventors reached a novel idea whether more improved dietary effect may be obtained by further adding additional component except both of the two-above components.

[0007]

[Problem to be solved by the Invention]

Accordingly, an object of the present invention is to

develop a novel diet food with excellent dietary effect, comprising  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid jointly in order to accomplish the purpose described above.

[0008]

As the result of intensive studies by the present inventors in order to solve the above described problem, more particularly, from the result of experimental studies relating to a number of additional materials for food, it was found out that, if a specific third component is further added to and admixed with the above  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid, the extremely excellent preventive effect on obesity or weight gain is achieved by the synergism of the three-above described components.

[0009]

[Means to solve the Problem]

As the result of studies by the present inventors, it was identified that when combining white ginseng component to  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid, the preventive effect on obesity or weight gain is remarkably increased by the synergistic performance.

[0010]

[Constitution of the Invention]

A diet food according to the present invention comprises  $\alpha$ -cyclodextrin,  $\gamma$ -linolenic acid and white ginseng, particularly, 100 pts.wt. of the cyclodextrin, 0.5-50 pts.wt. of linolenic acid and 0.5-5 pts.wt. of white ginseng; more preferably, 1-10 pts.wt. of linolenic acid and 1-3 pts.wt. of

white ginseng.

[0011]

The  $\alpha$ -cyclodextrin used in the present invention is not particularly limited to, but includes any ones commonly known. Also, the  $\alpha$ -cyclodextrin can be used alone and/or in a form of mixture in compatible with other materials.

[0012]

The  $\gamma$ -linolenic acid used in the present invention can be also used alone and/or in a form of mixture combined with other components and/or materials, that is, Evening primrose oil being exemplified as the  $\gamma$ -linolenic acid.

[0013]

"white ginseng" referred in the present invention may be an usual term to widely include general white ginseng materials. More particularly, the white ginseng used in the present invention comprises panax ginseng prepared from the root bark of various araliaceous shrubs and/or yam species, preferably the semi-product obtained by removing root hair and/or skin from the panax ginseng then drying the treated material, parboiling the dried material and drying again the product. The white ginseng comprises mainly free fatty acids, sesquiterpene, sterol or sugar components, branched acetylene alcohols (that is, panaxytols, peptadeca-1-one-4,6-diene-3,4-diol, etc.).

[0014]

The present necessarily needs three of the above cited compounds at the same time; in addition to, exhibits a

superior antiobestic effect to prevent the obesity and the increase in body weight caused by the synergistic effect derived from the three compounds. Such synergistic effect is particularly remarkable when the  $\gamma$ -linolenic acid is contained in an amount of 0.5-50 weight parts, more preferably 1-40 weight parts, while the white ginseng being contained in 0.5-5 weight parts, in particular, 1-3 weight parts relative to 100 weight parts of  $\alpha$ -cyclodextrin.

[0015]

In accordance with the present invention, the synergistic effect due to the addition of saponin can be more enhanced in case of admixing and/or combining chlorophyll; extracted juice from *Eucommia ulmoides* leaves; sporophyll lactic acid; at least one or two from activated peptide species with the previously obtained mixture mainly containing three components described above.

[0016]

Such chlorophyll is well known as one of chlorophyll species as well as one of pyrroles. The chlorophyll are classified into a, b, c, d, and e types and/or bacteriochlorophyll, bacterio-pyridine or so forth. The chlorophyll efficiently used in the present invention comprises at least one species of said compounds and/or mixtures thereof generally referred to as "chlorophyll."

[0017]

Further, the chlorophyll may comprise a combined form of chlorophyll and any proteins referred to as a chlorophyll



protein.

[0018]

Such extracted juice from *Eucommia ulmoides* leaves and sporophyll lactic acid itself used in the present invention are food additives conventionally known and are not particularly limited but include any one commercially available in related applications.

[0019]

In particular, the present invention represents a noticeable efficacy of such chlorophyll to improvement of the synergistic effect.

[0020]

The chlorophyll, extracted juice from *Eucommia ulmoides* leaves and/or sporophyll lactic acid are contained in an amount of 0-5 weight parts, preferably 1-3 weight parts relative to 100 weight parts of  $\alpha$ -cyclodextrin, respectively.

[0021]

In accordance with the present invention, said three components such as the  $\alpha$ -cyclodextrin, the  $\gamma$ -linolenic acid and the saponin together can be contained in a variety of foods or food additive materials; and may be formed into any desirable shapes including tablets, pills, granules, etc. by adding generally known additives. Such food additive materials are not particularly restricted, but include a number of materials such as wheat, vegetable cellulose, soybean powder, lactose, glucose, starch or the like.

[0022]

The following experimental examples and embodiments further illustrate the present invention, but it is understood that the invention is not limited thereto.

[0023]

[Experimental Example]

The following test was conducted to 20 panels grouped with healthy female persons (at the ages 21-26). Particularly, to 5 groups of the panels with 5 persons per group the following compositions were provided at a rate of 0.015g/kg three times per day (morning, noon and night), as well as typical meals in a certain amount. After 50 days, variations of body condition for all of the panels were observed. As a result of the test, the variations in size and/or volume of four items such as hip surroundings, thigh surroundings, body weight and appearance were measured, then an average value per group for each item was listed in Table 1 described below. The results of respective items were evaluated with reference to normal conditions per group before providing the compositions. In case the value was increased, it expressed "+" while "-" means the value being decreased. The results are illustrated in the following table 1, provided that the group No. 6 is for a control group.

[0024]

[Table 1]

Group	Composi- -tion	Weight (%)	Appearance	Hip surroundings (%)	Thigh surroundings (%)
1	1	-2.11	Seemed to be a little slimed	-2.5	-2.4
2	2	-0.1	No altered	-0.2	-0.1
3	3	-3.2	Clearly observed to be slimed	-3.5	-2.9
4	4	-3.1	Clearly observed to be slimed	-3.4	-3.0
5	5	-2.5	Same to above	-2.7	-2.8
6	-	0	No altered	0	0

[0025]

Composition 1

A mixture of  $\alpha$ -cyclodextrin and  $\gamma$ -linolenic acid

(10:1 weight ratio) - - - 100 weight parts

Wheat powder - - - 500 weight parts

[0026]

Composition 2

The mixture same to the above - - 0 weight parts

Wheat powder - - - 500 weight parts

White ginseng	-- -- --	4.5 weight parts
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[0027]

Composition 3

The mixture same to the above	-- --	95.5 weight parts
White ginseng	-- -- --	4.5 weight parts
Wheat powder	-- -- --	500 weight parts

[0028]

Composition 4

The mixture same to the above	-- --	97.5 weight parts
White ginseng	-- -- --	2.5 weight parts
Wheat powder	-- -- --	500 weight parts

[0029]

Composition 5

The mixture same to the above	-- --	99.5 weight parts
White ginseng	-- -- --	0.5 weight parts
Wheat powder	-- -- --	500 weight parts